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FOR PROFESSIONAL DEVELOPMENT PROGRAM

TECHNICAL TRANSLATION IN THE FIELD OF ACADEMIC COMMUNICATION

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Contents

Module 2: Grammatical issues in translation of literary, scientific and technical texts
(20 hours)

Section 1: Thematic-rhematic articulation.

Objective: To master students' knowledge in the field of basic means of developing the factual-content component, as well as basic construction rules of the grammatical-lexical structuring in the framework of thematic-rhematic articulation.

Theoretical notes

При переводе мы часто сталкиваемся с таким понятием, как *коммуникативное (смысловое) членение предложения*. В основе любого предложения, независимо от синтаксической организации, лежит двухкомпонентная структура – тема («данное») и рема («новое»). Смысловая структура противопоставлена грамматической, т.е. тема не всегда совпадает с подлежащим, а рема – со сказуемым:
Example:
If natural pressure is not great enough to force the oil to the surface, *pumps (rheme) may be used (theme).* - Если естественное давление недостаточно для вытеснения нефти на поверхность, *задействуется (тема) насосное оборудование (рема).*

В английской речи рема может быть и в конце, и в начале фразы!
В русской письменной речи рема всегда стремится к концу фразы!
Перенос исходного порядка слов в русское предложение может привести к смещению смыслового ударения!
Для правильного обнаружения ремы необходимо учитывать следующие индикаторы:

- Неопределенный артикль:

A copper water-carrying cooling coil was activated during the freezing of the material. - В процессе замораживания материала включался в работу *медный змеевик с охлаждающей водой.*

- Подлежащее главного предложения при наличии придаточного обстоятельственного времени:

Other instabilities generally became increasingly important as the coupling factor was increased. - По мере увеличения параметра связи все более важными *становились другие неустойчивые решения.*
One sensor was positioned in each of 25 tubes after the bundle was assembled and installed in the test facility. - После сборки и монтажа пучка в экспериментальной установке в каждую из его 25 труб установили *датчик.*

- Подлежащее главного предложения при наличии обстоятельства цели:

To reduce the resistance of the bed, *larger particles* were required. - Чтобы уменьшить сопротивление (кипящего) слоя, требовалось использовать *более крупные частицы.*

- Подлежащее дополнительного придаточного:

It was generally observed that *a heat affected zone* was present in the surface region of each specimen. - В поверхностной зоне каждого образца обычно наблюдалось присутствие *зоны термического влияния.*

The data clearly show that *large quantities of pyrites* can be removed from coal. - Эти данные убедительно показывают, что из угля можно удалить *большое количество пирита.*

- Подлежащее придаточного обстоятельственного причины:

Results were rewarding since *much knowledge* was derived for a relatively small investment in computer time. - Результаты окупили эти усилия, так как за относительно малое компьютерное время была получена *большая информация.*

Средства-подсказки нахождения ремы:

- глагол-сказуемое в пассиве с ослабленной информативностью (*is discussed, is considered, is investigated, is discovered, is explored*);
- глагол-сказуемое в активе с «бытийным» значением (*appears, occurs, takes place*);
- слова-выделители *only, just, merely, such as, at least, rather than;*
- конструкция *there is*;
- формальное подлежащее *it*;
- *as* в значении «в качестве»;
- словосочетания типа *of particular interest, of particular concern*.

Task 1: Translation practice

Translate the following sentences. If necessary, change the word order.

1. Very little machining is necessary to prepare the sample.
2. As employers develop and implement sophisticated new equipment more workers who are capable of using new technologies will be needed.
3. At present chemical methods of purifying water are extensively made use of.
4. Fig. 13 suggests total flame radiation is reduced rather than increased by using emulsified fuels.
5. Little attention has been given, however, to the combustion of pyrites as an impurity in coal.
6. Risk probability is often concluded from averaging data. Perhaps the full range of risk factors should be looked at instead, and presented to senior management when trying to make a ‘go-no go’ decision.
7. This method is mentioned here only for the sake of completeness.
8. You can also choose additional coverages that are optional, not required, that could increase the premium.
9. The partnership is also developing interfaces that will allow inter-operation with other grids at the institutional, national and international levels.

10. Renewable energies such as wind, hydro, solar and biomass emit no greenhouse gases, but tend to cost more than coal, oil or gas, which do.
11. Burning or combustion is the process of uniting a fuel or combustible with the oxygen in the air.
12. It is a good thing for these practices to be passed on.
13. Static stress, if held to practical limits, is not the major criterion for determining service life of the elastomer.
14. Apomorphine doses impair the reaction time of fast reacting but not slow reacting rats.
15. One suggestion is that the lone pair electron in pz of F is readily and easily donated and overlapped to empty pz orbital of boron.
16. From the invention of the telescope to the time of particle accelerators, insight and understanding have grown.
17. It is true that all the advances and improvements that occur within nanotechnology, have their drawbacks and disadvantages when misused, can also cause pollution and produce undesirable effects on the environment and our surroundings.
18. LC-MS/MS gives unequalled accuracy and precision for analysing small molecules in complex biological systems.
19. Technical expert is person who provides specific knowledge or expertise to the audit team.
20. These are the impetus for a growing demand for the Availability of IT Services that are time and place independent.
21. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.
22. Stress-relief features are optional.
23. The intrinsically safe transmission technology MBP is usually limited to a specific segment.
24. This will not only increase confidence in the methods, but will make them more robust.
25. Initially, this was attributed to the deflection of the impactor on striking the blade thus creating a smaller notch than expected.
26. API publications may be used by anyone desiring to do so.
27. … at a temperature low enough to ensure or cause permanent strain of the metal.
28. In order to ensure a high degree of device interchangeability among devices of the same type…
29. Thus, the density of flux lines around the conductor would be far greater in the presence of a magnetic material than if the conductor were surrounded by air.
30. Annex A includes concept diagrams that provide a graphical representation of the relationships between terms in specific fields relative to quality management systems.

Task 2: Translation practice

Analyze the following sentences and explain how the word order is changed.

1. The alloy was supplied as a cast ingot, samples of which were then homogenized at 1200°C for 48 h in partially evacuated sealed quartz capsules that were flushed with argon. The sealed samples were cooled in air following the homogenization heat treatment.

2. Both horizontal and vertical centrifugal casting methods are used for making FGMs. There are various other variants and methods of using centrifugal casting techniques for making FGM. Centrifugal infiltration process is one of the techniques.
3. Taking advantage of the possibility of improving the quality of local values by calculating them as time averages over sufficiently long period of time provides the means to obtain a deeper insight of the model and the simulated process. Thus, aiming at macroscopic thermodynamic properties, suitable time intervals for averaging these properties have to be identified.

Home Assignment

1. Learn the material of the section find more examples for translation on the related topic.

Section 2: Articles. Translation issues.

Objective: To develop knowledge of translation of the articles as their lexical meaning has to be shown in the language of translation, otherwise, the meaning can be either not complete or incorrect due to the fact that the articles are semantically integrated into the sentence.

 **Theoretical notes**

В русском языке грамматическая категория артикля отсутствует. В функции маркера существительного и выражения определенности и неопределенности английский артикль в русском переводе просто опускается. Но артикль имеет ряд дополнительных функций, которые обязательно должны быть переданы при переводе на русский язык.

1. Неопределенный артикль может выполнять роль маркера ремы предложения, подсказывая тем самым переводчику, какой порядок слов надо выбрать в переводе:

A boy entered the room. - В комнату вошел мальчик.

The boy entered the room. - Мальчик вошел в комнату.

2. Неопределенный артикль в функции неопределенного местоимения передается на русский язык местоимениями «один», «какой-то», «некий»:

There's a gentleman waiting for you in the hall. - В холле вас ждет какой-то джентльмен.

3. Неопределенный артикль в функции числительного "один" передается на русский язык эти числительным:

He didn't have a friend in the whole gigantic city. - Во всем огромном городе у него не было ни одного друга.

A stitch in time saves nine. - Один стежок, сделанный вовремя, стоит девяти (фразеологическая калька).

4. В функции указательного местоимения могут употребляться оба артикля. Определенный артикль встречается значительно чаще и передается, как правило, местоимениями «тот», «этот» и т.п.:

Miss Prism, more is restored to you than the handbag. I was the baby you placed in it. (O.Wilde). - Я - тот ребенок, которого вы положили в него.

Неопределенный артикль в этой функции, в основном, передается местоимением «такой»:

The only sensible solution is a peace which envisages the withdrawal of all foreign troops. - Единственным разумным решением является такое мирное соглашение, которое предусматривает вывод всех иностранных войск.

5. Нечастый, но интересный и сложный случай, - употребление определенного артикля в эмфатической функции. В этом случае он приобретает значение прилагательного в превосходной степени. Само же прилагательное в тексте отсутствует, его надо определить на основе контекста и ввести в предложение. Если переводчик не заметит эмфатической функции артикля, предложение может просто потерять смысл.

I need hardly tell you that in families of high position strange coincidences are not supposed to occur. They are hardly considered the thing (O.Wilde).

В этих рассуждениях леди Брэкнелл из пьесы О.Уайльда «Как важно быть серьезным» подходящее по смыслу прилагательное – «подобающий», «респектабельный». Возможный вариант перевода – «Едва ли их можно счесть вполне респектабельной вещью».

Пример из футбольного репортажа:

“On the 25-th minute of the second half Brazilian Romario scored the goal of the championship”. - Вновь задача заключается в подборе прилагательного, но только на основе более широкого контекста установить, идет ли речь о “самом важном” или “самом красивом” голе чемпионата.

6. Артикль с именами собственными.

Оба артикля в этом случае приобретают одно из разобранных выше значений. Ниже приводится предложение, в котором с именем собственным использован как определенный, так и неопределенный артикль.

He could not himself betray Syme, partly from honour, but partly also because, if he betrayed him and for some reason failed to destroy him, the Syme who escaped would be a Syme freed from any obligation of secrecy, a Syme who would simply walk to the nearest police office. - ... тот Сайм, которому удастся избежать гибели, станет (таким) Саймом, которого уже не будет связывать данное им слово... (Оба артикля использованы в функции указательного местоимения).

Неопределенный артикль перед именем собственным может также обозначать принадлежность к определенной семье:

His wife is a Montgomery. - Его жена из семьи Монтгомери.

Неопределенный артикль с именами собственными может приобретать значение эмфазы. В этом случае он передается при помощи либо местоимения «сам», либо прилагательных «целый», «новый», «настоящий».

Even a Napoleon couldn’t win this battle. - Даже сам Наполеон не смог бы выиграть это сражение.

Task 1: Translation practice

Translate the following sentences paying attention to the articles.

1. Inventions and discoveries have led to the mechanization of industry.
2. Modern art reflects all the uncertainty and instability of modern life.
3. All power corrupts, and absolute power corrupts absolutely.
4. The discovery of the New World brought undreamt of wealth to the Europe of the sixteenth century.
5. Society today is probably more tolerant of the weak and the unfortunate than ever before.
6. Politics is the art of the possible.
7. For the first time in history mankind has the power to destroy itself.
8. The last Monday in August is a national holiday in England.
9. There was a time when the government leaders were well aware of this.
10. It is time for a decision: without it, in the end, there will be no possible solution.
11. Few other international problems have such a complex structure or such wide repercussions.
12. On this particular morning he sat facing a new client, a Mr. Reginald Wade.
13. He hadn't answered the one letter she had written to him.
14. I was beginning to mix with people of a kind I'd never mixed before.
15. I don't believe he is a Newton, though he is undoubtedly an extremely talented physicist.
16. I looked round as Caro stood up with cries of welcome. I was taken aback. Yes, it was the David Rubin I knew very well, the American physicist.
17. It was a very sharp and decisive Poirot who spoke now.
18. I cannot identify anyone. But I could testify that a woman came out of that particular room at that particular time.
19. A 50-point salary structure is proposed by the National Union of Teachers today. The new structure will be submitted to the Blackpoll annual conference in April.
20. Always a moment came when we had to face the fact that no trains were coming in.
21. I use the elevated word for want of a better one and by it I don't mean learning. I mean the stamp left by blood plus bringing up, the two taken strictly together.
22. A young girl is a very interesting phenomenon, George, especially when she has brains.
23. One does not just communicate, one communicates something to someone. And the something communicated is not the words used in the communication, but whatever those words represent.
24. He had hardly spoken a word since they left Riccardo's door…
25. A cold May is the usual thing in the north.
26. The May of 1945 will always rest in my memory.
27. A chapter of this book is devoted to the study of differential equations.
28. This is a corollary of Lebesgue's theorem for the above case.
29. The existence of partitions of unity may be proved by applying the above theorem.
30. The definition of distributions allows us to write this equation with suitable constants.
31. A fundamental solution is a function satisfying the above equality.
32. A remarkable feature of this solution should be mentioned.

33. Let us consider two random variables with a common distribution.
34. A more general theory follows from this reasoning.

Home Assignment

1. Learn the material of the section find more examples for translation on the related topic.

Section 3: Attributive groups in translation.

Objective: To develop students' knowledge of the attributive groups and the ways these groups or clusters should be translated into Russian.

Theoretical notes

Атрибутивные сочетания – это цепочки слов, состоящие из определений и определяемого слова. Существуют определенные правила перевода таких сочетаний.

Артикль (местоимение), стоящее перед/рядом с существительным (без предлогов), относится к последнему слову ряда, ***с которого и нужно начинать перевод****. Остальные существительные ряда переводятся в «зеркальном» порядке!*

These *errors recovery* ***techniques*** are well known.
Эти ***методы*** *исправления ошибок* хорошо известны.

Acceleration factor ***Vs*** *Integrated circuit*
Коэффициент (**чего?**) ускорения ***Vs*** Интегральная схема (**какая?**)

Но! *Supporting point* - подпирающая точка/точка опоры
Phase-modulated signal - сигнал, (**какой?**) модулированный по фазе

Если первым словом ряда является прилагательное, оно обычно относится **к последнему слову**, однако для окончательного решения требуется тщательный смысловой анализ конкретного сочетания.

Global nuclear power production – мировое производство атомной энергии

Но!
Liquid metal cooled reactor – реактор с охлаждением на жидких металлах

В состав атрибутивной цепочки могут входить неличные формы глагола и прилагательные. Образуемый ими средний компонент сохраняет форму в переводе.

The rock-*feeding* system - система, *подающая* горную породу
A water-*cooled* conveyor - конвейер, *охлаждаемый* водой
The job *scheduling* problem - проблема *планирования* работ
A replication-*dependent* process - процесс, *зависимый от* репликаций
An oxygen *free* gas - газ, *свободный от* кислорода
The failure-*prone* device - устройство, *склонное к* отказам

Распространенные варианты атрибутивной связи и их перевод

(1) вещество/материал + (2) предмет
(1) прилаг. + (2) сущ. (им. пад.)
metal surface – металлическая поверхность;

cast iron disc – чугунный диск
(1) вещество/материал + (2) предмет, воздействующий/производящий его
(2) сущ. (им. пад.) + (1) сущ. (род. пад.)
steam superheater – перегреватель пара
НО! *concrete mixer – бетономешалка; stone breaker – камнедробилка*

(1) предмет + (2) действие, направленное на предмет
(2) сущ. (им. пад.) + (1) сущ. (род. пад.)
water treatment – очистка воды

(1) предмет + (2) действие, производимое предметом
(2) сущ. (им. пад.) + (1) сущ. (род. пад.)
wave propagation – распространение волн
(2) сущ. (им. пад.) + (1) сущ. (твор. п./предл. пад.)
water treatment – обработка водой (см. контекст!)

(1) предмет + (2) свойство предмета
(2) сущ. (им. пад.) + (1) сущ. (род. пад.)
metal viscosity – текучесть металла
НО! *tank pressure – давление в баке*

(1) часть предмета + (2) сам предмет
(1) прилаг. + (2) сущ. (им. пад.)
ball mill – шаровая мельница

(1) предмет + (2) часть этого предмета
(2) сущ. (им. пад.) + (1) сущ. (род. пад.)
microscope lens – линза микроскопа

В практике перевода возможны случаи отклонения от данных правил. Главный ориентир – контекст!

tolerance extremes - предельные отклонения
maximum theory - теоретический максимум
power output - выходная мощность
pressure rating - номинальное давление
steel plate - толстолистовая сталь
oil solubility - растворимость в масле
chlorine substitution - замещение хромом
metal-working liquids - жидкости, используемые при обработке металла

В отличие от предлога *of* союзы *and* или *or* не прерывают ряда:

It is here that the skills of the *process or biochemical engineer* and the microbiologist must come together.
Именно здесь должны объединить усилия *инженер-технолог или инженер-биохимик* и микробиолог.

Task 1: Translation practice

Translate the following phrases into Russian.

microstructural stability
dislocation motion
heat treatment
carbon nanotubes
creep strength
subgrain boundaries
yield strength
cell performance
oxygen conductivity
friction pair
power applications
film deposition techniques
proton exchange membrane fuel cell
fuel flexibility
pulsed laser deposition
anode substrate
nanoparticle coating
wear resistance
surface topography
silicon wafer
ice matrix
separation payments
service establishment
welfare expenditures
target growth rate
background paper
birth control
child-care workers
community education
community centre
package deal arrangement
credit facilities
district attorney
drafting committee
ratification instrument
business calculations
capital flow rates
expenditure pattern
space age
session committee group
air force unit
construction efforts
tool deflection

Task 2: Translation practice

Analyze the following short texts and highlight the attributive groups. Make a list of attributive phrases that you found denoting the type of the attributive group, then translate the phrases.

A

The thermal and electrical properties of thin films play vital roles in determining the performance of many components and devices used in modern engineering systems. Many measurements have demonstrated that the thermal conductivities of various thin films, as well as the electrical conductivities of electrically conductive thin films, are much smaller than those of their corresponding bulk materials. The difference in the conductivities between thin films and bulk materials is considered to be caused by the structure defect, boundary scattering (surface scattering, and grain boundary scattering.

For metallic thin films, theoretical models based on carrier scattering have been proposed to predict the conductivities. In most of the considerations, the thermal conductivity of a thin film is calculated from its proportional relation to the electrical conductivity via the Wiedemann–Franz law or a similar analogy. Several experimental studies investigated either the thermal conductivity or the electrical conductivity and used the electrical–thermal relation to determine the other property. Although two methods that were used to measure the thermal conductivity and specific heat may also be used to measure the electrical conductivity, very few investigations deal with both conductivities together. Furthermore, most of the previously studied thin films are deposited on substrates and the considerations of the effects caused by the substrates are not sufficient.

For this reason, we report on measurements of the in-plane thermal conductivity of suspended Pt nanofilms, for which there is no effect caused by a substrate. Also a four-wire method is used to measure the electrical resistance. Results show that the electrical conductivity, resistance-temperature coefficient, and in-plane thermal conductivity of the nanofilms are much smaller than the corresponding bulk values, but the Lorentz numbers are larger than the corresponding bulk values.

B

It can be seen from Table that induced tensile stresses account for the loss of grain material from the diamond coated piezoelectric ceramic material. Therefore, the maximum tensile stress is the best indicator of diamond performance, in terms of grinding ratio, during a nanogrinding operation. The analysis performed on perfectly sharp diamond grains has provided a strong correlation between maximum tensile stress induced in the grain material and the wear parameter, grinding ratio, for the experimental data used in this chapter.

Correlations with other data sets have not proved so fruitful. From this, we can safely assume that the mechanism of grain fracture is not the dominant mechanism, which implies that other mechanisms are operating. The correlation coefficient demonstrates that a tougher grain material must be used in order to limit the effects of abrasive wear and the formation of wear flats, or a stronger bond, and possibly a higher volume of bond between diamond and piezoelectric crystal, is required to nanogrind under the current experimental conditions. Therefore, the present method of calculating the correlation coefficient between the maximum tensile stress and the grinding ratio demonstrates its potential application to the wider problem of selecting abrasive grains based on specific metal removal rates and the nature of the nanogrinding operation.

When porous tools are used to embed diamonds or any other abrasive material, the same analysis can be used but account of the properties of the bonding bridge must be made. The bonding bridge can be made of a variety of different materials but the most common one used for dressable applications is the vitrified type, which is made from a mixture of clays, glasses, and minerals. The emphasis on using dressable types for nanogrinding is based on their ability to be re-sharpened by dislodging worn grains and by microstructural phase transformations by focusing optical energy on the bonding bridges that hold the grains in place.

C

The microstructure of Aluminium-SiC functionally graded metal matrix composites fabricated by centrifugal casting method in Fig. 1 show the graded distribution of SiC particles in Al (356) alloy matrix at three different locations from the outside periphery of 16 mm thick ring casting. The outer periphery of the casting shows higher concentration of SiC particles than the interior of the casting. The image analysis results depicted in Fig. 2a shows that the outer periphery of the cylindrical

casting contains a maximum of 45 vol. % SiCp followed by a graded and reduced SiC volume percentage of 43, 37, 33 and 30 at 2, 3, 4 and 4.5 mm away from the outer periphery respectively. After 5.5 mm, the volume fraction drops sharply reaching zero at 6.5 mm. By subjecting a homogenous composite melt of Al (356)-15% SiC to a centrifugal force, a maximum volume fraction of 45% has been obtained at the outer periphery leading to selective improvement in specific properties such as hardness and wear resistance. Figure 2b shows higher hardness near the outer periphery of the casting in as cast and aged conditions. The inner periphery of the casting at 15.5 mm from the outer edge has shown the presence of gas porosity and few agglomerated particles. The gas bubbles present in the melt are thrown towards the inner periphery of the casting by the centrifugal force due to their lower density. The agglomerates constituting partially wetted or non-wetted particles or both and gases having lower overall density are also pushed towards the inner periphery. Further, the movement of gas bubbles from the outer periphery towards the inner during the rotation can hinder the particle movement in the opposite direction as well as carry away few particles. The gas and shrinkage porosities thus pushed to the inner periphery can be removed by machining to obtain a sound casting.

The comparison of distribution pattern of centrifugally cast silicon carbide particles reinforced 356 alloy with 2124 and 6061 Al alloys fabricated by the authors shows that there is a sharp transition between the SiC enriched and depleted zones in 356 alloy matrix, whereas a gradual or smooth transition is seen in 2124 matrix alloy. This is obviously due to the presence of varying amount of eutectic liquid, i.e. 356 alloy contains more eutectic liquid compared to 2124 alloy, the difference in freezing range (longer freezing range of 2124 alloy – 637–490°C than 356 alloy – 615–564°C) and viscosity of the alloy. Hence, the freezing range of the matrix alloy dictates the nature of transition from particle enriched to depleted zone.

Task 3: Translation practice

Analyze the attributive group structure and translate the sentences.

A.

1. He gave her a naughty-boy look.
2. When he was finished with his little witch hunts, he went to the sports section.
3. Towards the end of the question-and-answer session people began slipping out to get back to their offices.
4. In this street the men had dead-end jobs or none at all.
5. There were tall steel-and-glass etageres.
6. The house was full of get-well flowers.
7. She needled me about the Mets' pathetic four-in-the-row loss to the Yankees.
8. Jeeves wanted to get me on a Round-The-World cruise.
9. I called Sharon and an emergency session has been scheduled for 6.30.

B.

1. He was struck by this purity-on-a-pedestal fragility.
2. She was a voluptuous blonde in a transparent negligee with a you-know-what look in her eye.
3. This isn't one of those open-shut, can-this-marriage-be-saved deals.
4. The hostess strode on in her off-the-shoulder square-dance dress.
5. That trial file included the photos of his soon-to-be-ex-wife.

6. After a few weeks even those few travelers he met on out-of-the-way paths proved too much for him.
7. Then he hit the hood in an off-you-go sort of way.
8. He was certainly a long way from the kindly, noncontroversial, let's-not-say-anything-specific-in-case-it-gives offence type.
9. Silently, some never-before-experienced lens slid into place.
10. The wink-and-handshake deal had many loose ends.

C.

1. In the black-and-white dress with, over it, Mrs. Fylemon's cast-off, beauty-without-cruelty synthetic fox coat, she was the old Carol again.
2. She made a face at him, an angry-Momma-scolding-little-boy face.
3. He grinned a little-boy-is-being-naughty-but-he-knows-Momma-will-forgive grin back at her.
4. Samantha was playing the old game, the aren't-we-funny-but-brave line.
5. She was sure it was simply anxiety or not-so-simply anxiety.
6. This was one of my stupid, speak-aloud, brain-not-engaged moments.

Task 4: Translation practice

Translate the following sentences.

1. I'm not talking about big earth-shattering secrets. Not the-president-is-planning-to-bomb-Japan-and-only-Will-Smith-can-save-the-world type secrets. Just normal, everyday little secrets.
2. I look like a top business woman. My hair is straightened, I'm wearing discreet earrings like they tell you to on How-to-win-that-job articles.
3. When I arrived, the Glen Oil marketing boys started on this long, show-off "Who's-travelled-the-most?" conversation.
4. How on earth do people do those fly-on-the-wall documentaries?
5. Have they gathered to watch me being fired? Is this some kind of how-to-fire-people training?
6. But does he have to have such an expression of injured dignity on his face? A kind of you've-mortally-wounded-me-but-I'm-such-a-good-person-I-forgive-you look.
7. You know how we made our decisions? I gave a minuscule, tell-me-if-you-like shrug.
8. I stare at her, in her Burberry raincoat and her designer spectacles and her smug I'm-better-than-you face.
9. "What are you doing here?" I ask with a little I'm-not-actually-interested shrug.
10. I wrench my arm away and start striding away as best I can through the thicket of mobile-phone-gabbing lawyers.

Home Assignment

1. Learn the material of the section find more examples for translation on the related topic.

Section 4: Passive Voice. Practical and theoretical translation peculiarities relating to Passive Voice.

Objective: To develop students' knowledge in such grammatical topic as Passive voice and develop translation skills in this grammatical field.

Theoretical notes

Соотношение пассивного и активного залога в научно-технической литературе составляет примерно 30/70 %. Высокий процент пассивных конструкций объясняется типичным для научного текста акцентированием действия (процесса, явления, факта), а не субъекта, совершающего его.

Сохранение порядка слов английского предложения	**Изменение порядка слов при переводе**
1. Перевод сказуемым в страдательном залоге: А. Кратким причастием: These data *are presented* in Fig. 2. - Эти данные *представлены* на рис. 2. The variable *was computed.* - Эта переменная (величина) *была вычислена* на машине. This regularity *was observed* by many scientists. - Эта закономерность *была выявлена* (обнаружена) многими учеными. Б. Глаголом с окончанием *-ся* / *-сь*: The answers *are given* instantly upon demand. - Ответы *даются* сразу же после запроса. Noise *is reduced* by filtering. - Шум *уменьшается* с помощью фильтрации. **2. Перевод сказуемым в действит. залоге (рус. неопределенно-личное предложение):** This method *was successfully utilized to predict a reliable model.* - Этот метод *успешно использовали для построения надежной модели.*	**Подлежащее содержит новую информацию:** ***Ср.:*** The correctness of the conclusion was confirmed *by many facts.* - Правильность этого вывода была подтверждена *многими фактами.* **Но!** *A number of experiments* was performed to test this prediction. - Для проверки данной гипотезы был проведен *ряд экспериментов.* In fact, *many criteria* are needed to consider such a weighty decision. - На самом деле, чтобы принять взвешенное решение, необходимо учитывать *многие критерии.* ***Ср.:*** The phenomenon was explained by *a well-known researcher.* - Это явление объяснил *известный исследователь.* **Но!** *An interesting phenomenon* was registered by this researcher. - Этот исследователь отметил *интересное явление.*

Правила перевода сложных пассивных форм

Если русский глагол требует предлога, перевод следует начинать с него!

It is quite evident that not every experiment *can be relied upon.*

Вполне очевидно, что не на каждый эксперимент можно *положиться.*

The problem *was not dealt with* before.

С этой проблемой раньше *не имели дела.*
(Эта проблема ранее *не рассматривалась.)*
Many questions were answered correctly.
На многие вопросы *были даны* правильные ответы.

Если за сказуемым стоят два предлога подряд, то первый из них относится к подлежащему, а второй – к обстоятельству, которое стоит после сказуемого в пассивной форме!

These conditions, however, will be objected *to by* other scientists.
Однако *против* этих условий будут выступать другие ученые.
The work is often referred *to in* special literature.
На эту работу часто ссылаются *в* специальной литературе.

Обычно в полной форме представлено только первое сказуемое, а второе (и, если есть, последующие) – только его смысловой частью. При переводе следует использовать подлежащее для каждого глагола (во втором случае употребляется местоимение)!

This material is much *experimented upon* and *worked at* in many institutes.
С этим материалом проводится много экспериментов, и *с* ним работают во многих институтах.

Обратите внимание на перевод следующих сочетаний в пассивной форме:

to give consideration to = to consider – рассматривать
to make allowance for = to allow for – учитывать, делать поправку на
to make an attempt = to attempt – пытаться, делать попытку
to make contribution to = to contribute to – вносить вклад в
to make mention of = to mention – упоминать о
to make reference to = to refer to – ссылаться на
to make use of = to use – использовать(ся)
to place emphasis on = to emphasize – делать упор на, подчеркивать
to take account of = to consider – принимать во внимание, учитывать
to take advantage of = to use – воспользоваться, использовать
to take care of = to care – следить, заботиться
to take note (notice) of = to pay attention to – обращать внимание на

The increase of temperature *was taken account of* in calculating the value.
При вычислении данной величины *учитывалось* повышение температуры.
In this method *use was made* of pyramid structures.
В этом методе *используются* пирамидальные структуры.
An attempt *must be made* to elaborate a novel approach.
Должна быть предпринята попытка разработать новаторский подход.

Task 1: Translation practice

Translate the following sentences.

1. The discovery of radium was followed by a number of important inventions.
2. This project must be given due consideration.
3. A floating body is acted upon by two sets of forces.
4. The process will be gone on the surface of the isolating coating.
5. This problem may be approached from different standpoints.
6. Conclusions arrived at this stage are subject to revision.
7. The general plan should be submitted to, and approved by the committee.
8. His remarks were taken no notice of.
9. The report was followed by a discussion.
10. This author is often referred to.
11. This subject will be given detailed treatment in another essay.
12. This is certainly a great inconvenience, but it must be put up with.
13. This raises more questions than can be dealt with here.
14. That was the principle upon which his attitude to all the problems was formed.

Task 2: Translation practice

Translate the following sentences applying the ruses given above.

1. The reaction was followed by measuring temperature.
2. The details will be dealt with later.
3. Fallacies of this kind can often be met with.
4. A decision was arrived at and this is hardly to be wondered at.
5. This central idea must not be lost sight of.
6. This paper was shortly followed by another by the same author.
7. The exceptions are not easily accounted for.
8. These rules were arrived at independently.
9. These aspects will be commented upon in the following paragraph.
10. Some urgent problems of our work have been touched upon here.
11. This system was agreed upon after much debate.
12. The first question is readily answered.
13. This volume was followed by a second one.
14. Efforts were made to elucidate the problem.

Task 3: Translation practice

Translate the following sentences.

1. The congress was referred to as a most representative forum in this field.
2. No amount of selected examples, however convincing, can be relied upon.

3. As far as other compounds of this series are concerned they will be dealt with in another chapter.
4. While such special cases are rather easily dealt with the general problem is considerably more difficult.
5. It is possible; however, that too much emphasis has been placed upon this fact.

Task 4: Translation practice

Translate the following sentences.

1. This issue has been touched upon earlier in this chapter but it bears repeating here because it is central to the concept of our interest.
2. In a previous chapter note was taken of one peculiarity that is of crucial importance for understanding the phenomenon being analyzed.
3. Except where explicit reference is made to the work of others, one is not able to be sure about the authorship of the theses advanced.
4. Taking account of low quality fuel it is not critical whether use would be made of an imported engine.
5. Energy from tides, the oceans and hot hydrogen fusion are other forms that can be used to generate electricity. Each of these is discussed in some detail with the final result being that each suffers from one or another significant drawback and cannot be relied upon at this time to solve the upcoming energy crunch.

Task 5: Translation practice

Translate the following sentences.

1. In his book emphasis is placed on the localization problem.
2. Mention is made of an improved version of this method.
3. An important contribution was made to the study of this phenomenon.
4. In deriving these formulas no allowance was made for temperature increase.
5. Care must be taken to assure that an even number of logical inversions occur.
6. An attempt was made to measure samples by immediately raising the temperature/
7. In their discussion no account was taken of the environmental conditions.
8. Advantage is often taken of the effect of temperature on solubility.
9. In this chapter detailed consideration is given to digital computers.
10. In the following notice is chiefly taken of the former point.

Task 6: Translation practice

Translate the following sentences.

A

1. Ferrite is easily identified by its comparatively low density of carbon atoms.
2. The evolution of the wear curve can be split into three regimes.
3. Only few experimental studies are carried out on evaluation of mechanical properties by this approach.

4. The highest points of the topography are covered by 200-500 nm thick and compact layers.
5. No changes of the intensity as a function of temperature have been observed.
6. Heating and melting were performed under argon atmosphere.

B

1. Emphasis is put on the nanochemical composition of individual grains, as well as on the magnetic behavior of powder ensembles and of single particles.
2. Various strategies are used to maximize the film thickness. First, it is essential to ensure there is good adhesion between the film and the substrate.
3. A major effort has been made to reduce stress by alloying with, for example, Si or metals.
4. A gradual increase of the specific surface area with increasing nitrogen pressure up to 3.5 MPa is observed.
5. Laser particle analyzer is here employed to test the dispersity of nanoscale iron particles in aqueous medium.
6. It is concluded that micrograin boundary carbides reduce creep rates by several orders of magnitude.
7. Films can be made that are inhomogeneous or graded, so that they have internal stress relief mechanisms.
8. It is established that the properties of articles made from thermally expanded graphite (TEG) depend mainly on methods and conditions of their formation.
9. However, no direct proof has been provided so far that these photons contribute to the harmonic-generation process.
10. Considering the result shown in Fig. 3, it is determined that the concentration of iron vapor in the chamber increased with the increasing volume fraction of hydrogen.
11. It is postulated that the change in the particle size with the volume fraction of the hydrogen gives rise to the change in the coercivity of the synthesized iron nanoparticles.
12. It is well known that the presence of excess mobile dislocations in fully martensitic steels causes the occurrence of continuous yielding in engineering stress-strain curves.

C

1. The formation of microstructures of tempered martensite ferritic steels during a standard heat treatment, which involves a martensitic and/or bainitic transformation, can be thought of as a "severe internal micro SPD process" (resulting in micrograin sizes and dislocation densities similar to those achieved by an external macro SPD, e.g. by ECAP).
2. It is well known that the particle size in particle-reinforced or dispersion-strengthened composite materials plays an important role in controlling its mechanical properties, as well as the volume fraction of particles does.
3. It is anticipated that the occurrence of recovery and recrystallization in the martensite matrix during tempering at high temperatures, would possibly enhance the formation of an equiaxed ultrafine ferrite grain.
4. It is indicated that nanoscale iron particles may agglomerate into larger aggregates of chain-like structures in aqueous suspension due to their nanoscale size effect, while the single particle of nanoscale iron ranges from 30 nm to 40 nm as evidenced in the TEM image.

Home Assignment

1. Learn the material of the section find more examples for translation on the related topic.

Section 5: Modal verbs in the translation focus.

Objective: To develop students' knowledge in the translation area referring to Modal Verbs.

 **Theoretical notes**

Модальный глагол эквиваленты	**Форма инфинитива**	**Передаваемое значение**	**Рекомендуемый перевод**
must	Infinitive Indefinite	долженствование, необходимость;	должен, нужно, необходимо, следует
	Infinitive Indefinite	вероятность	наверное
	Infinitive Perfect	вероятность	должно быть, вероятно
to have to	Infinitive Indefinite	долженствование, необходимость	должен, вынужден, пришлось
	Infinitive Indefinite	достаточность	достаточно (лишь)
	Infinitive Indefinite	эмфатическое отрицание	и не было (еще), и не встречалось, и не появлялось
to be (to)	Infinitive Indefinite	долженствование, необходимость	должен, предстоит, надлежит
	to be found, to be seen, to be got, to be had	возможность	можно
ought to	Indefinite Infinitive	долженствование	нужно, следует
	Indefinite Perfect	необходимость	следовало бы
should	Infinitive Indefinite	долженствование,	нужно, следует
	Infinitive Perfect	необходимость	следовало бы
need	Infinitive Indefinite	долженствование, необходимость	нужно, следует
can	Infinitive Indefinite		может, умеет
could	Infinitive Indefinite	физическая или умственная способность	мог, умел; мог бы, можно было бы
	Infinitive Perfect	умение	мог бы, можно было бы
could not	Infinitive Perfect		не может быть, чтобы; не мог бы
may	Infinitive Indefinite	возможность, разрешение	может, можно, разрешено
	Infinitive Indefinite	возможность, вероятность	возможно, может быть + настоящее время глагола
	Indefinite Perfect		возможно, может быть + прошедшее

			время глагола
might	Infinitive Indefinite	возможность с сильным оттенком сомнения	возможно (но вряд ли), может быть (но едва ли) + настоящее время глагола
	Infinitive Perfect		возможно (но вряд ли), может быть (но едва ли) + прошедшее время

Таблица с иллюстративным контекстом

How could you do it!	Как вы могли это сделать!
He must have been here yesterday.	Он, должно быть, был здесь вчера.
This is the only right way. You needn't evade it. There is no other way.	Это единственный правильный путь и вы не должны от него уклоняться. Ведь другого выхода не существует.
He was in wild spirits, shouting that you might dissuade him for twenty-four hours.	Он пришел в неистовство и кричал, что вы можете разубеждать его хоть круглые сутки, не переставая.
I can see the English coast already.	Я уже вижу берега Англии.
This paper must be typed.	Эта статья должна быть напечатана на машинке.
He must be busy now.	Он, наверное, занят сейчас.
He must have missed the train.	Он, должно быть, опоздал на поезд.
He had to go there alone.	Ему пришлось ехать туда одному
One has only to read the business journal to see the real origin of this war.	Достаточно лишь просмотреть журналы деловых кругов Уолл-Стрит, чтобы стала ясна причина этой войны.
And if there has ever been a copy of the Daily Worker that has been more handed around than that one I have yet to see it.	... И не было другого такого номера газеты, который бы столько раз показывали другим.
He was to go there alone.	Ему надлежало ехать туда одному.
This magazine is to be found at any bookstall.	Этот журнал можно найти в любом киоске.
You ought to know this rule better.	Вам следует лучше знать это правило.
You ought to have done it earlier.	Вам следовало бы сделать это раньше.
You should ask him about it.	Вам следует спросить его об этом.
You should have asked him about it.	Вам следовало бы спросить его об этом.
He need not come so early.	Ему не нужно приходить так рано.
She can play tennis.	Она умеет играть в теннис./Она играет в теннис.
It can be easily done.	Это легко можно сделать.
She could play tennis when she was 12.	Она уже умела играть в теннис, когда ей

	было 12 лет.
I could help you a little later.	Я мог бы помочь вам немного позже.
You could have told me about it.	Вы могли бы сказать мне об этом..

Task 1: Translation practice

Analyze the translations given below. Define the meaning of modal verbs.

It is particularly requested that Miss Sharp's stay in Russell Square may not exceed ten days.	Особая просьба: пребывание мисс Шарп на Рассель-сквер недолжно превышать десяти дней.
Which I really thought was a sensible idea that Ham might have acted upon	По моему мнению, это была разумная мысль, и Хэму надлежало бы так и сделать.
It was strange, and very different from any romantic picture which his fancy might have painted.	Положение создалось неожиданное и совсем непохожее на те романтические картины, которые некогда рисовало ему воображение.
But I have yet to meet a single Frenchman who did not see in this an insult to his own national dignity.	Но я не встречал еще ни одного француза, который не считал бы это оскорблением своего чувства национальной гордости.
Where you really in earnest when you said that you could love a man of lowly position? - Indeed I was. But I said «might»	- Вы на самом деле не шутили, когда сказали, что могли бы погубить человека небогатого? - Конечно, нет. Но ведь я сказала «может быть, смогла бы».
One has to do real violence to the term democracy to consider this white, aged Congress as democratic.	Те, кто считает этот конгресс, на котором главным образом присутствуют пожилые представители с белым цветом кожи, демократическим, издеваются над самим понятием демократии.

Task 2: Translation practice

Translate the following sentences into Russian.

1. He said that this was not a temporary problem. Lasting arrangements should be made.
2. It was not without significance that people who were connected at that level with the situation should be expressing grave disquiet.
3. Such is the speed of history today that, when this is published, so many new and perhaps more shocking developments may have taken place that the events herein detailed may seem even more remote.
4. In reality the Pope may not have been anxious to see his suggestion, advanced from the marble rostrum of the General Assembly of October 4, enacted a bare six weeks later.

5. The strain must have been particularly telling on a man like Mr. D., one of the most conscientious of the Government's back-bench MPs. He was involved in a car accident last session, but continued to attend to Commons duties on crutches.
6. Share prices soared on the London Stock Exchange yesterday in the hope that Bank rate is to be cut from the present 6.5 per cent to 6 per cent.
7. Unless the Bill passes through all its stages in the Commons and the Lords before the session ends it will have to be started all over again in the new session in November.

Task 3: Translation practice

*Define grammatical function of the verb **to do** and translate the sentences into Russian.*

1. What the report prepared by a body of the most conservative characters does show is that newspaper economics, and particularly the enormous and growing reliance on advertizing revenue, puts the whole industry into crisis.
2. The defenders of the present United Nations system point out that the agencies do in fact work together successfully on a number of projects.
3. The Foreign Secretary did not show any willingness to discuss this question, but he did refer to the responsibility of both governments as co-chairman of the last conference.
4. Perhaps they may even engender a little shame among Cabinet Ministers at the hold-up in the road building. If they do, the conference will be voted a great success.
5. Mafia crime syndicates are gaining control of many legitimate businesses and now pose a greater threat to Russia than did the gangsters of the Al Capone era in the 1930s.
6. It is bound to be a delicate operation, trenching as it does upon sensitive areas of a nation's cultural heritage and on its spiritual inadequacies.

Task 4: Translation practice

*Define grammatical function of the verbs **will** and **would** and translate the sentences into Russian.*

1. The regiment will attack at dawn.
2. Don’t phone them now – they’ll be having dinner.
3. “Can somebody help me?” - “I will”
4. I will stop smoking.
5. I’ll break your neck!
6. Will you have some more wine?
7. Won’t you come in?
8. She won’t open the door.
9. The car won’t start.
10. When nobody’s looking, she’ll go into the kitchen and steal biscuits.
11. He’ll often say something and, then forget what it was he said.
12. He would never let anybody know what he was doing.
13. You will keep forgetting things.
14. You would tell Mary about the party - I didn’t want to invite her.

15. If you put a match to it, real amber won't melt, but imitation will.
16. Gold won’t dissolve in hydrochloric acid.
17. Sulphuric acid will dissolve most metals.
18. Will you come this way, please?
19. He’s strange – he’ll sit for hours without saying anything.

Task 5: Translation practice

Translate the following texts into Russian, paying attention to the modal verbs and their meanings.

Text 1

Bauestein demanded a post-mortem. He needn’t have done so. Little Wilkins would have been quite content to let it go as heart disease. “Yes”, I said doubtfully. “But we don’t know. Perhaps he thought it safer in the long run. Someone might have talked afterwards. Then the Home Office might have ordered exhumation. The whole thing would have come out, then, and he would have been in an awkward position, for no one would have believed that a man of his reputation could have been deceived into calling it heart disease”.

Text 2

I cannot remember writing this book. I must have written it in a cramped and rather dark study I had a house on Chinnor Hill, at the Western end of the Chilterns. It was begun and ended, I suspect, in misery, which was where I really lived then, but I had either to write hard or to go round cadging. And with a promising subject, like these comic characters, writing that simply had to be done might offer me a temporary means of escape, a brief release from the grim burden.

Text 3

The house was a sepulcher, our fear and suffering lay buried in the ruins. There would be no resurrection. When I thought of Manderley in my waking hours I would not be bitter. I should think of it as it might have been, could I have lived there without fear. I should remember the rose garden in summer, and the birds that sang at dawn. I would think of the blown lilac and the Happy Valley. These things were permanent, they could not be dissolved. They were memories that cannot hurt. We would not talk of Manderley. I would not tell my dreams. For Manderley was ours no longer. Manderley was no more.

Home Assignment

1. Learn the material of the section find more examples for translation on the related topic.

Section 6: English verbals and peculiarities of their translation into Russian

Objective: To develop students' knowledge in the field of mixed features of verb forms that are revealed in the principal spheres of the part-of-speech characterization, i.e. in their meaning, structural marking, combinability, and syntactic functions. Develop translation skills in relation to verbals.

 **Theoretical notes.**

Неличные формы глагола – общее название для следующих отглагольных форм: инфинитив, герундий, причастие. Каждая неличная форма может использоваться самостоятельно или входить в состав оборота.

Как и личная форма (сказуемое), все неличные формы глагола имеют категорию залога (актив/пассив), но не имеют категории времени, поэтому форма **perfect** указывает не на прошедшее время, а на предшествование действию, выраженному сказуемым, а форма **continuous** – на одновременность протекания двух действий.

Одна их самых больших трудностей при осмыслении английского оригинала связана с омонимичностью грамматических форм. Так, четыре формы герундия полностью совпадают с четырьмя формами причастия I, хотя выполняют иные функции во фразе и, следовательно, иначе переводятся. Всего же в английском языке семь основных форм с суффиксом –ing:

АНГЛ. ЯЗ.	***РУС. ЯЗ.***	***ПРИМЕРЫ***	***ПЕРЕВОД***
Причастие (в составе Continuous)	Личная форма глагола	This article is building the theory for the scientific field of industrial ecology	*Автор статьи выстраивает теорию такого научного направления, как промышленная экология*
Причастие (как обстоятельство)	Деепричастие	Building the theory, it is important to consider the relationships among the components	*При построении теории важно учитывать отношения между ее частями*
Причастие (как определение)	Причастие	The group building the theory intends to invite other scientists from around the globe to share their discovery	*Рабочая группа, занимающаяся построением этой теории, намеревается пригласить ученых из самых разных стран для обмена опытом*
Герундий	–	Building the theory requires continued	*Построение теории требует постоянного*

		feedback on what appears to be working and what is not	*отслеживания того, что представляется реалистичным, а что – нет*
Отглагольное существительное	Отглагольное существительное	The building of the theory involves an in-depth study of the obtained results	*Построение теории подразумевает всесторонний анализ полученных результатов*
Прилагательное	Прилагательное	Glucose is the basic fuel and basic building material for much of life	*Глюкоза является основным топливом и базовым строительным материалом живых клеток*
Существительное	Существительное	The building is meant to provide updated spaces for the test department	*Предполагается, что дополнительные площади в этом здании будут отведены отделу испытаний*

Примеры основных оборотов с неличными формами глагола

ИНФИНИТИВ

Субъектный инфинитивный оборот	These stages are believed to occur sequentially *Считается, что эти стадии происходят последовательно*
Объектный инфинитивный оборот	One might expect the events to be closely connected with each other *Можно ожидать, что эти явления окажутся тесно связанными*
FOR + инфинитив	Here is another vital point for a specialist to explain *Есть еще один сверхважный вопрос, который должен объяснить специалист*

ГЕРУНДИЙ

Независимый герундиальный оборот	The engineers' finishing this work depends on many things *Время завершения этой работы инженерами зависит от многих факторов*

ПРИЧАСТИЕ

Субъектный причастный оборот	One must not consider this distinction as

	holding good absolutely *Такое различение не стоит считать абсолютным*
Объектный причастный оборот	We see this complex process taking place under our eyes *Мы видим, как данный комплексный процесс происходит на наших глазах*
Независимый причастный оборот	The other conditions being equal, the acceleration will be the same *Учитывая неизменность прочих условий, ускорение останется прежним*

Task 1: Translation practice

Translate the following sentences and short passages into Russian paying attention to the infinitive constructions.

1. It is quite necessary for him to make common calculations to approach the solution of the problem.
2. The experiments to be made will help us to approach the subject under investigation.
3. There are two approaches to the solution of the problem, one to be used in analytical investigations, the other in simulation.
4. Many supposed the statement not to be obvious and believed it to require a proof.
5. For us to examine the problem from another point of view is crucial.
6. It would be very nice if one could have a computer do the thinking and have a computer make the decisions.
7. We know this experiment to be followed in many researches on the subject.
8. It is necessary for the investigator to apply the knowledge gained from his library to the exploration problem.
9. High temperatures allowed the reaction to be carried out in two hours.
10. People's knowledge is assumed to be well-organized and to facilitate the understanding of new information.
11. The talks are intended to share the latest advanced ideas in this field.
12. Two years were sufficient for the work to be done.
13. This change seems to have begun towards the end of the last century.
14. To strengthen the magnetic field means to increase the acceleration of the particles.

A

1. We know this value to have been derived from that equation.
2. The problem is far too involved for one to be able to solve it.
3. We are going to overcome this difficulty with various means to be tried.
4. There seems to be a general tendency for industrial problems to become more complex.
5. The technology is thought to be extremely expensive, with questionable returns on investment.

6. The language of specialists is often difficult for the layman to read.
7. There does not appear to be a promising approach to the solution of the problem.

B

1. When sound waves are directed on the diaphragm they cause it to move backwards and forwards.
2. The resistance of the conductor is known to depend not only on the material it is made of and its temperature but on its diameter and length as well.
3. For a sound to be heard by the human ear it should be between the frequencies of approximately 20 cycles and 15,000 cycles.
4. Scientists suppose magnets and their properties of attraction to have been known for nearly 5,000 years.
5. Newton stated that the force which makes objects fall towards the Earth is only a special case of a general attraction between any two masses.
6. We now know any sample of ferromagnetic material at room temperature to be made up of macroscopic domains (of the order of a few thousandths of an inch) where the atoms are completely lined up.
7. The force between parallel currents can be measured and is found experimentally to be proportional to the product of the currents and inversely proportional to the distance between them.

C

Technology is rapidly growing. Something which is a future in technology will become history tomorrow. Technology of future is believed to be comparatively more sophisticated. Anything which is natural will be amalgamated with technology to produce something beneficial for the human kind. Also, the future of technology is believed to be more user-friendly. Future technology will be more convenient to use as there would be enough options for technological devices.

D

Becquerel experimented with fluorescent substances to see if they emitted X-rays as well as visible light. He was among the first to suspect that one radioactive element will change into another one. Becoming interested in the new field of radioactivity he discovered that radioactive substances emit three kinds of “rays” (“alpha”, “beta”, and “gamma”). The discovery of X-rays and the discovery by Becquerel which followed caused the Curies to study radioactivity.

Task 2: Translation practice

Translate the following sentences paying attention to use of the gerund.

1. This failure was due to the designer’s having been careless.
2. They worked very hard with a view to completing the experiments in time.
3. We could solve the problem in case of your giving us all the necessary data.
4. Besides being very involved this procedure is very costly.
5. In burning the fuel unites with oxygen – one of the constituents of air.
6. Every factor preventing the process from proceeding smoothly led to an unsatisfactory result.
7. His being able to make more discoveries was taken for granted.
8. This reference book differs from the previous in including a greater number of names.

9. In addition to being both creative writer and critic he is also a scholar.
10. Scientific discoveries affected intellectual life by overthrowing many of the old days ideas respecting the world and nature.
11. His output of scientific work has been great, but it shows every sign of having been thoughtfully and conscientiously carried out.
12. Of the numerous methods of conducting similar experiments to be found in literature, the following are among those which have been proved to be most useful.
13. Man alone has succeeded in impressing his stamp on nature, not only by shifting the plant and animal world from one place to another, but also by so altering the aspect and climate of his dwelling place that the consequences of his activity can disappear only with the general extinction of the terrestrial globe.

Task 3: Translation practice

Translate the following sentences paying attention of the use of participle.

1. When frozen water is a colourless solid.
2. The results so far received do not satisfy us.
3. Unless otherwise stated the value will be considered constant.
4. The results obtained are consistent and may be summed up in one simple rule.
5. Given certain conditions, such work could be done by everybody.
6. Nearly all the technical problems as documented in the literature were solved by this method.
7. Once designed and if designed properly a relational database is very flexible. 8. Vectors are essentially geometrical quantities, being defined by a magnitude and a direction.
8. The orientation of a compass needle with respect to the earth's north and south poles is thought of as being due to the presence of a magnet in the interior of the earth, with its ends or poles close to, but not quite coinciding with the geographic poles.
9. Wear mechanisms in nanogrinding processes appear to be similar to that of single-point cutting tools, the only difference being the size of swarf particles generated.
10. Sound is known to travel in water at the speed of about a mile a second, the exact speed depending upon the temperature of water.
11. Scientists constantly explore the unknown, looking for new knowledge and the answers to unsolved questions.
12. These data must be taken into account, the effect of interconnections being by no means negligible.
13. The DTA effects are associated with mass losses, with the total mass loss being 11 %.
14. In general there are several ways by means of which electric current can be generated by magnetic action, all of them being based on the same principle, namely, on the cutting of the magnetic lines by a conductor.
15. It was thus possible to measure the friction coefficient continuously via on-line monitoring, with different friction loads chosen as 1, 2, 5 and 10 N, and different rotating speeds as 30, 60, 120, 180, 240 and 300 rpm in testing.
16. Superconductivity is the name given to a phenomenon, shown by some conductors of electricity, which lose all electrical resistance when cooled below a certain temperature.

17. A good high vacuum is practically a perfect nonconductor, since in it no carriers of electricity are present. If two metal plates or electrodes are enclosed in a vacuum by a glass tube, we have an open circuit and no current will flow. However, one of the electrodes being heated to a high temperature, the thermal velocity of some of the conduction electrons in the metal becomes high enough for these electrons to escape.

Home Assignment

1. Learn the material of the section find more examples for translation on the related topic.

ADDITIONAL PRACTICE

1. Prepare a text reflecting grammatical issues described in the section above and translate it.
2. Find more examples of verbals to share with the rest of the group.
3. Prepare examples of the use of passive voice and modal verbs in Russian. Offer the material to the group for further analysis and translation.